



Antennas for UHF 400-490 MHz band.

107497, Moscow Chernicinsky pr-d 7/1
 Tel.: (495) 775-43-19, 462-44-14
 Tel./fax: 462-44-14
 E-mail: radial@radial.ru
 www.radial.ru

Model	Short description	Gain, dBi	Band, MHz
Vertical antennas			
A6 UHF(L)-2	Vertical, collinear, fiberglass, 4.1 m	9,65	400-407
A6 UHF(L)-3	Vertical, collinear, fiberglass, 3.2 m	9,65	408-418
A6 UHF(L)-4	Vertical, collinear, fiberglass, 3.2 m	9,65	416-427
A6 UHF(M)-5	Vertical, collinear, fiberglass, 3.2 m	9,65	420-435
A6 UHF(M)-6	Vertical, collinear, fiberglass, 3.2 m	9,65	435-454
A6 UHF(H)-7	Vertical, collinear, fiberglass, 3.2 m	9,65	450-467
A6 UHF(H)-8	Vertical, collinear, fiberglass, 3.2 m	9,65	469-485
A10 UHF	Vertical, collinear, fiberglass, 6.3 m	12,15	433-440
A3-CDMA	Vertical, collinear, fiberglass	3	453-467
A3-70cm	Vertical, collinear, fiberglass	3	430-458
A5-UHF(L)-1	Vertical, collinear, fiberglass	5.5	403-418
A5-UHF(L)-2	Vertical, collinear, fiberglass	5,5	412-422
A5-UHF(L)-3	Vertical, collinear, fiberglass	5,5	417-430
A5-UHF(M)-4	Vertical, collinear, fiberglass	5,5	430-440
A5-UHF(M)-5	Vertical, collinear, fiberglass	5.5	440-460
A5-UHF(H)-6	Vertical, collinear, fiberglass	5.5	450-470
Dipole antennas			
D1 UHF	Single folded dipole	2,15-5,15	400-490
D2 UHF	Two dipoles and power divider	5,15-8,15	400-490
D4 UHF	Four dipoles and power divider	8,15-11,15	400-490
D8 UHF	Eight dipoles and power dividers	11,15-14,15	400-490
D2 UHF I	Two dipoles integrated with power divider	5.15-8.15	400-490
D4 UHF I	Four dipoles integrated with power divider	8.15-11.15	400-490
D4 UHF(H) I	Four dipoles integrated with power divider	8.15-11.15	450-540
DP1 UHF	Single folded dipole	5,15	400-490
DP2 UHF	Two dipoles and power divider	8,15	400-490
DP4 UHF	Four dipoles and power divider	11,15	400-490
DM4 UHF(L)	Four dipoles on mast	11,15	400-460
DM4 UHF(H)	Four dipoles on mast	11,15	440-490
LA-UHF	Lowprofil, ABS	2,15	400-490
LA-433	Lowprofil, ABS	2.15	428-438
LA-446	Lowprofil, ABS	2.15	440-452
PA-450	Quarter wave folded vibrator	2,15	450-470
PA-420	Quarter wave folded vibrator	2.15	405-445
Directional antennas			
Y4 UHF (L)	4-element yagi with folded dipole as feed element	8,15	390-440
Y4 UHF (H)	4-element yagi with folded dipole as feed element	8,15	430-490
Y6 UHF (L)	6-element yagi with folded dipole as feed element	11,15	400-445
Y6 UHF (H)	6-element yagi with folded dipole as feed element	11,15	435-475
Y9 UHF (L)	9-element yagi with folded dipole as feed element	13,15	395-430
Y9 UHF (H)	9-element yagi with folded dipole as feed element	13,15	435-470
Y5-433	5-element yagi	8,25	426-440
Y5-446	5-element yagi	8.25	436-454
Panel sector antennas			
RAO-2UL-60	Panel antenna, sector in horizontal plane 60°, ABS	10	380-440
RAO-2UH-60	Panel antenna, sector in horizontal plane 60°, ABS	10	435-500
RAO-2U-120	Panel antenna, sector in horizontal plane 120°, ABS	8	400-470
RAO-3U-120	Panel antenna, sector in horizontal plane 120°, ABS	10.5	400-470
RAO-4U-120	Panel antenna, sector in horizontal plane 120°, ABS	11	400-470
RAV-2UL-90	Panel antenna, lowprofil, sector in horizontal plane 90°, ABS	8	400-430
RAV-2UH-90	Panel antenna, lowprofil, sector in horizontal plane 90°, ABS	8	450-470
RAV-4UL-90	Panel antenna, lowprofil, sector in horizontal plane 90°, ABS	11	400-430
RAV-4UH-90	Panel antenna, lowprofil, sector in horizontal plane 90°, ABS	11	450-470
RAX-2UL-70	2 inputs panel with X-polarization, ABS	9	400-430
RAX-4UL-70	2 inputs panel with X-polarization, ABS	12	400-430
RAX-2UH-70	2 inputs panel with X-polarization, ABS	9	440-470
RAX-4UH-70	2 inputs panel with X-polarization, ABS	12	440-470

SU-3T

Subscriber, wall mounting antenna

4

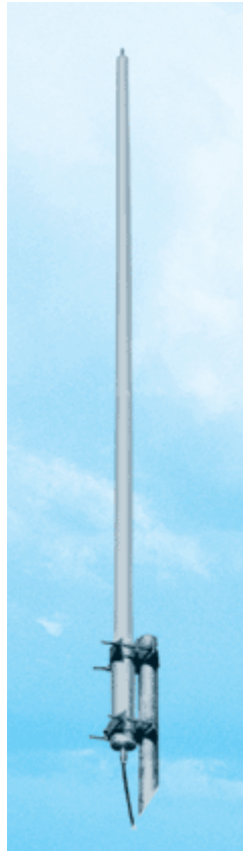
380-400

2009



400-490 MHz Vertical antennas A6 UHF (L-2,L-3,L-4,M-5,M-6,H-7,H-8)

107497, Moscow Chernicinsky pr-d 7/1
Tel.: (495) 775-43-19,462-44-14
Tel./fax: 462-44-14
E-mail: radial@radial.ru
www.radial.ru



Electrical specifications

Model	A6 UHF							
	(L)-2	(L)-3	(L)-4	(M)-5	(M)-6	(H)-7	(H)-8	
Operating frequency band, MHz	400-407	408-418	416-427	420-435	435-454	450-467	469-485	
VSWR, not more than	1.5							
Gain, dBi	9.65							
Sector in vertical plane, -3dB	12°							
Impedance, Ohm	50							
Max. power input, W	400							
Lightning protection	yes							
Adjustable	no need							

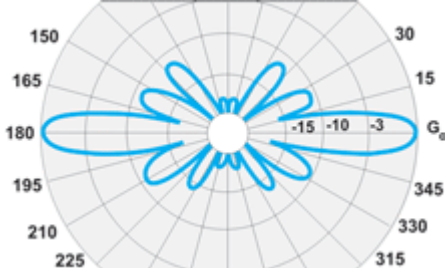
Mechanical specifications

Model	A6 UHF							
	(L)-2	(L)-3	(L)-4	(M)-5	(M)-6	(H)-7	(H)-8	
Weight, kg	not more 5							
Height/Length, mm	4120	3250	3250	3250	3250	3250	3200	
Mast diameter, mm	35-110							
Radome	fiberglass							
Rated wind velocity, m/s	40							
Wind loading area, m ²	0.16							
Load of side wind 40 m/s, H	180							
Temperature range, °C	from -50 to +50							
Connector	N-female, (7/16 DIN-optional)							

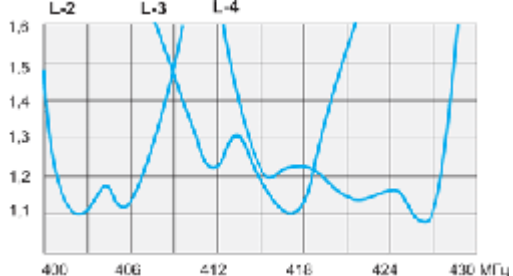
Antenna A6 UHF is a collinear construction of 11 transpositioning half-wave elements. It allows to achieve an ideally circular radiation pattern at high gain (9.65 dBi) and broad bandwidth of the frequencies of operation. Radio transparent weather-proof radome is made on the basis of fiberglass material. The radome has a polished coating which protects from UV irradiation and icing. The antenna has a DC grounding and does not need an additional adjustment. The model series of antennas A6 UHF

(covering the range of 408-485 MHz) is used in trunking commercial and departmental networks as well as in mobile networks of the communication standard NMT 450. The antenna's operation provides both the two-feeder type of antenna-feeder devices (AFD) (with separate feeders of receiving and transmitting channels of repeaters) and the one-feeder type that uses a duplexer. Recently a series of these antennas has been replenished by new models specially developed for the receiving and transmitting frequencies of the most popular UHF-sub-ranges. This has allowed to use the maximum possibilities of the gain in collinear antennas in the frequency ranges of interest, in spite of their scanning. For example, the model A6 UHF(L)-3 can be used in receiving channel of the "TETRA" systems while A6 UHF(M)-5 will be appropriate to be used as a transmitting one. In some cases, if the frequency scheme allows, one can apply A6 UHF(L)-4 successfully as a transceiver antenna and work through duplexer for one feeder. The multimedia reels in our CD catalog reflect rather well the peculiarities of these antennas.

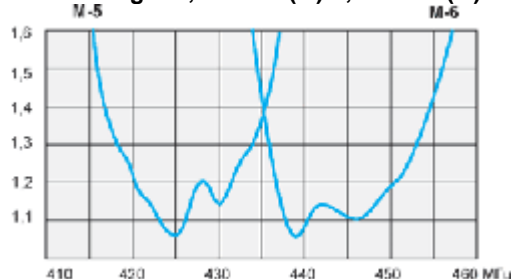
A6 UHF E-plane pattern



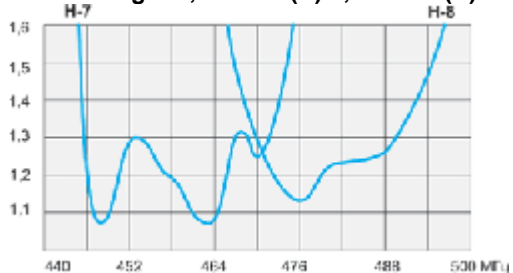
VSWR diagram, A6 UHF(L)-2, A6 UHF(L)-3, A6 UHF(L)-4



VSWR diagram, A6 UHF(M)-5, A6 UHF(M)-6



VSWR diagram, A6 UHF(H)-7, A6 UHF(H)-8





433-440 MHz Vertical antenna A10 UHF



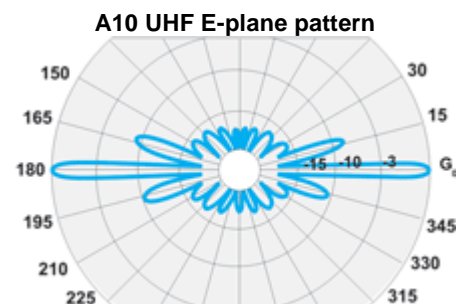
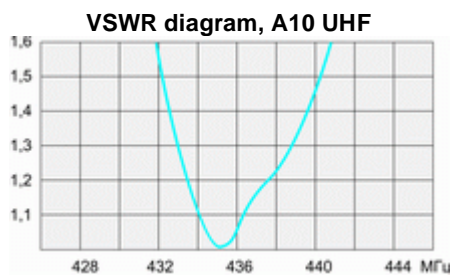
Electrical specifications

Model	A10 UHF
Operating frequency band, MHz	433-440
VSWR, not more than	1.5
Gain, dBi	12.15
Sector in vertical plane, -3dB	6°
Impedance, Ohm	50
Max. power input, W	400
Lightning protection	yes
Adjustable	no need

Mechanical specifications

Model	A10 UHF
Weight, kg	5.35
Height/Length, mm	6300
Mast diameter, mm	50-110
Radome	fiberglass
Rated wind velocity, m/s	40
Wind loading area, m ²	0.32
Load of side wind 40 m/s, H	360
Temperature range, °C	from -50 to +50
Connector	N-female, (7/16 DIN-optional)

Vertical antenna A10 UHF is a collinear construction, based on 22 transposition half-wave elements. This is an extreme gain (10 times power gain) possible to achieve in such constructions. It has slightly narrower concordance and gain bandwidth, because of the sequential feeder circuit used, therefore some difficulties in generation of product line appear in lfrom production. That's why such antennas now are manufactured only on demand.br>





430-468, 453-467 MHz Vertical antennas A3-70cm, A3- CDMA

107497, Moscow Chernicinsky pr-d 7/1
Tel.: (495) 775-43-19, 462-44-14
Tel./fax: 462-44-14
E-mail: radial@radial.ru
www.radial.ru



Electrical specifications

Model	A3-CDMA	A3-70 cm
Operating frequency band, MHz	453-467	430-468
Gain, dBi	3	3
VSWR, not more than	1.5	1.5
Polarization		vertical
Max. power input, W	50	50
H-plane beamwidth	360°	360°
E-plane beamwidth	60°	60°
Impedance, Ohm	50	50

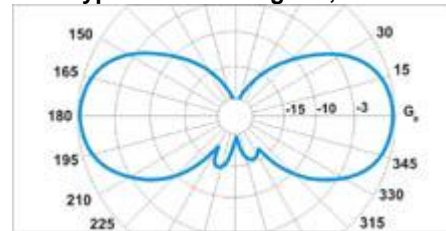
Mechanical specifications

Model	A3-CDMA	A3-70 cm
Dimensions (LxWxH), mm	45x45x560	45x45x560
Weight, kg	0.3	0.3
Rated wind velocity, m/s	40	40
Radiator	copper	copper
Radome	white fiberglass	white fiberglass
Mounting	On a mast (35-70 mm) or on wall	
Connector	N-female	N-female

A3-CDMA, A3-70cm antennas E-plane pattern



Typical VSWR diagram, "A3"





107497, Moscow Chernicinsky pr-d 7/1
 Tel.: (495) 775-43-19, 462-44-14
 Tel./fax: 462-44-14
 E-mail: radial@radial.ru
 www.radial.ru

403-470 MHz Vertical antennas A5 UHF



Electrical specifications

Model	A5 UHF
Operating Frequency band, MHz	403-470
Frequency bandwidth, MHz	15
VSWR, not more than	1.5
Gain, dBi	5.5
Impedance, Ohm	50
Max. Power input, W	100
Lightning protection	DC grounded
Adjustable	no need

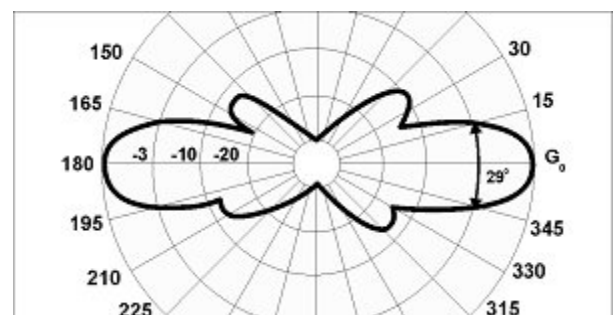
Mechanical specifications

Model	A5 UHF
Height/Length, M	0.85
Mast diameter, mm	35-70 (CPK-70)
Construction material	copper
Rated Wind Velocity, m/s	40
Temperature Range, °C	from -50 to +50
Connector	N-female

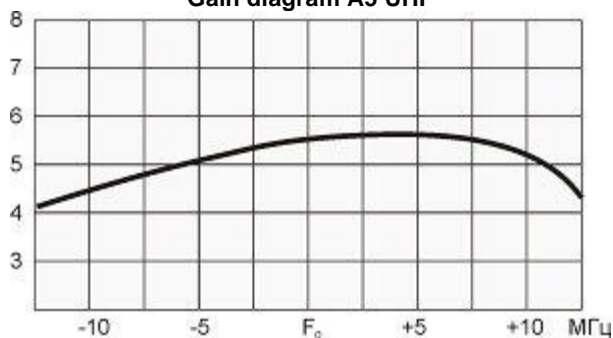
Model antenna type A5 UHF

A5-UHF(L)-1	403-418 MHz
A5-UHF(L)-2	412-422 MHz
A5-UHF(L)-3	417-430 MHz
A5-UHF(M)-4	430-440 MHz
A5-UHF(M)-5	440-450 MHz
A5-UHF(H)-6	450-470 MHz

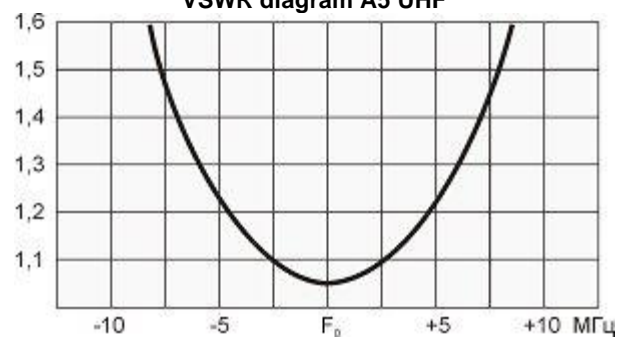
E-plane pattern A5 UHF



Gain diagram A5 UHF



VSWR diagram A5 UHF





400-490 MHz Dipole antennas D1 UHF, D2 UHF, D4 UHF, D8 UHF

107497, Moscow Chernicinsky pr-d 7/1
Tel.: (495) 775-43-19, 462-44-14
Tel./fax: 462-44-14
E-mail: radial@radial.ru
www.radial.ru

D1 UHF



D2 UHF



D4 UHF



D8 UHF



Electrical specifications

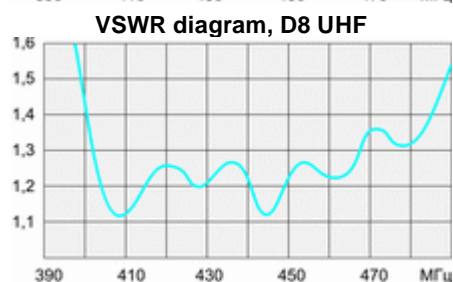
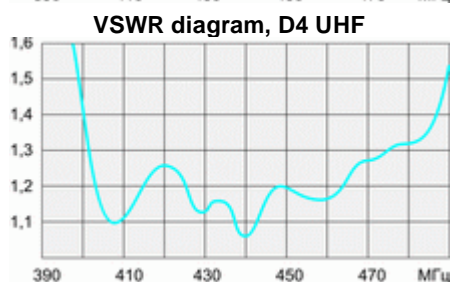
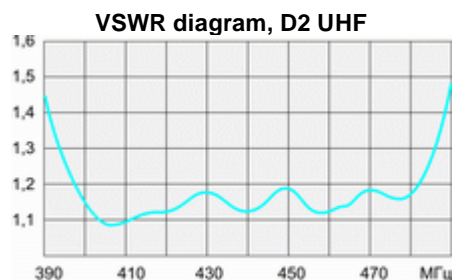
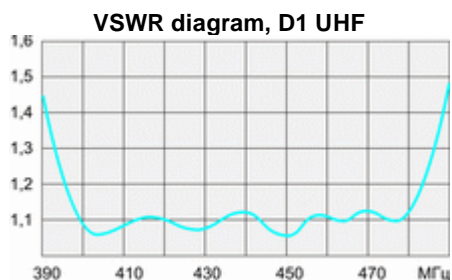
Model	D1 UHF	D2 UHF	D4 UHF	D8 UHF
Operating frequency band, MHz			400-490	
VSWR, not more than			1.5	
Gain OMNI, dBi	2.15	5.15	8.15	11.15
OFFSET, dBi	5.15	8.15	11.15	14.15
Sector in vertical plane , -3dB	70°	37°	18°	9°
Impedance, Ohm			50	
Max. power input, W			400	

Mechanical specifications

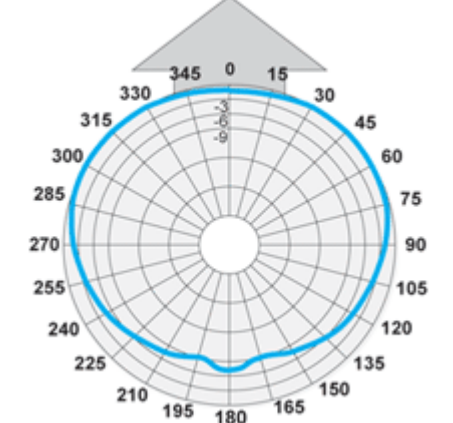
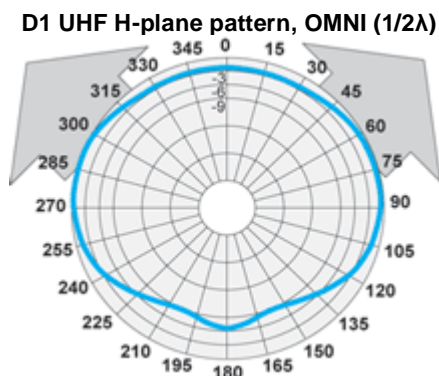
Model	D1 UHF	D2 UHF	D4 UHF	D8 UHF
Weight, kg	1.6	3.5	7.3	14.8
Height/Length, M	0.3	0.8	1.7	3.5
Construction material			Aluminium alloy	
Mast diameter, mm			38-65	
Rated wind velocity, m/s			55	
Wind loading area, m ²	0.028	0.056	0.112	0.225
Load of side wind 45 m/s, H	32	64	128	256
Rated wind velocity with 0.5" icing, m/s			28	
Temperature range, °C			from -50 to +50	
Connector			N-female	

Antenna D1 UHF represents folded Pistolcors dipole. Its primaries: wide operating band and nearly circular pattern. Welded

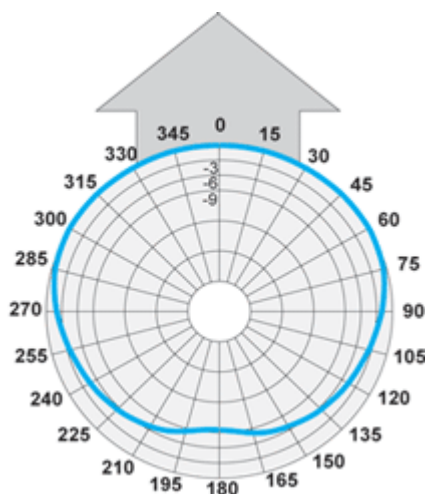
construction of dipole eliminates possibility of intermodulation. Emitting unit directional pattern can be slightly corrected by changing distance from it to mast. Collapsible construction provides easy antenna mounting and dismounting. Antenna has reliable polymeric coating, which protects from hostile environment and icing. D2, D4, and D8 antennas are built along parallel addition of two, four and eight collinear arranged active folded dipole powers principle.



D1 UHF H-plane pattern, OFFSET(1/4λ)



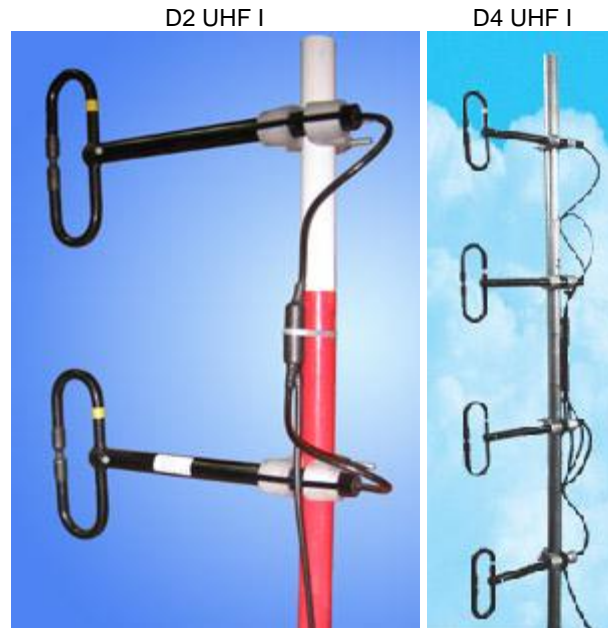
D1 UHF H-plane pattern, OFFSET (1/8λ)





400-540 MHz Dipole antennas D2 UHF I, D4 UHF I, D4 UHF(H)I

107497, Moscow Chernicinsky pr-d 7/1
Tel.: (495) 775-43-19, 462-44-14
Tel./fax: 462-44-14
E-mail: radial@radial.ru
www.radial.ru



Electrical specifications

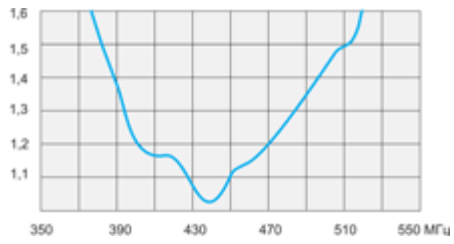
Model	D2 UHF I	D4 UHF I	D4 UHF(H)I
Operating frequency band, MHz	400-490	400-490	450-540
VSWR, not more than	1.5	1,5	1.5
Gain OMNI, dBi	5.15	8.15	8.15
OFFSET, dBi	8.15	11.15	11.15
Sector in vertical plane -3 dB	37°	18°	18°
Impedance, Ohm	50	50	50
Max. power input, W	200	200	200

Mechanical specifications

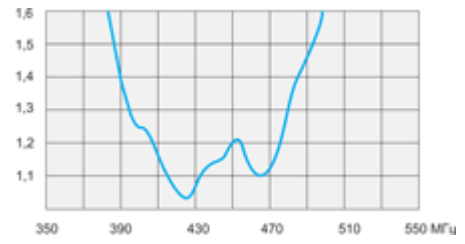
Model	D2 UHF I	D4 UHF I	D4 UHF(H)I
Weight, kg	3.5	7	7
Construction material	Aluminium alloy		
Mast diameter, mm	38-65		
Rated wind velocity, m/s	55		
Wind loading area, m ²	0.056	0.112	0.112
Load of side wind, 45 m/s	64	128	128
Rated wind velocity with 0.5" icing, m/s	28		
Temperature range, °C	from -50 to +50		
Connector	N-female		

Antenna arrays of series "I" (letter "I" - from "integrated"), namely, D2 UHF I and D4 UHF I consist of two and four dipoles D1 UHF, correspondingly, fixed on a mast and connected by all-soldered cable integrators without connectors. These antennas possess all the advantages of antennas of "D" series: broad operating bandwidth, practically circular radiation pattern, low sensitivity to the noise of industrial origin, the possibility to slightly change the radiation pattern of antenna array in H-plane, the steady polymeric coating. New antennas D2 UHF I and D4 UHF I are remarkable for their enhanced reliability due to all-soldered wiring. For operating at the frequencies 450-540 MHz we have developed a model D4 UHF(H) I. These antennas are provided with the detailed SWR graphs for various RP.

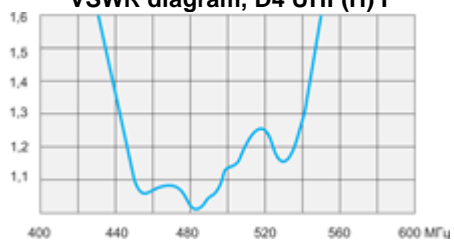
VSWR diagram, D2 UHF I



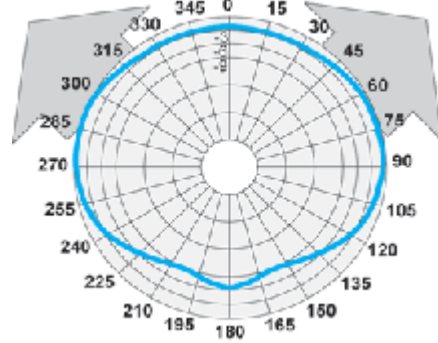
VSWR diagram, D4 UHF I



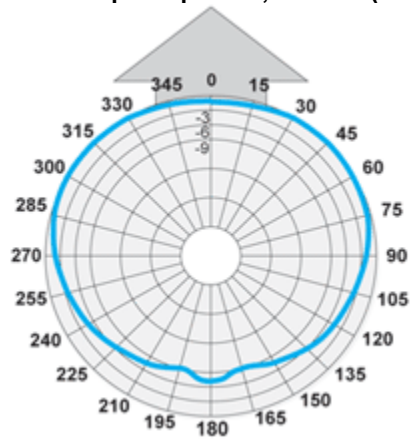
VSWR diagram, D4 UHF(H) I



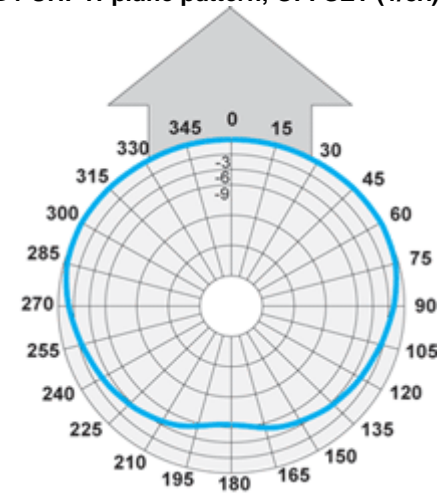
D1 UHF H-plane pattern, OMNI (1/2λ)



D1 UHF H-plane pattern, OFFSET(1/4λ)



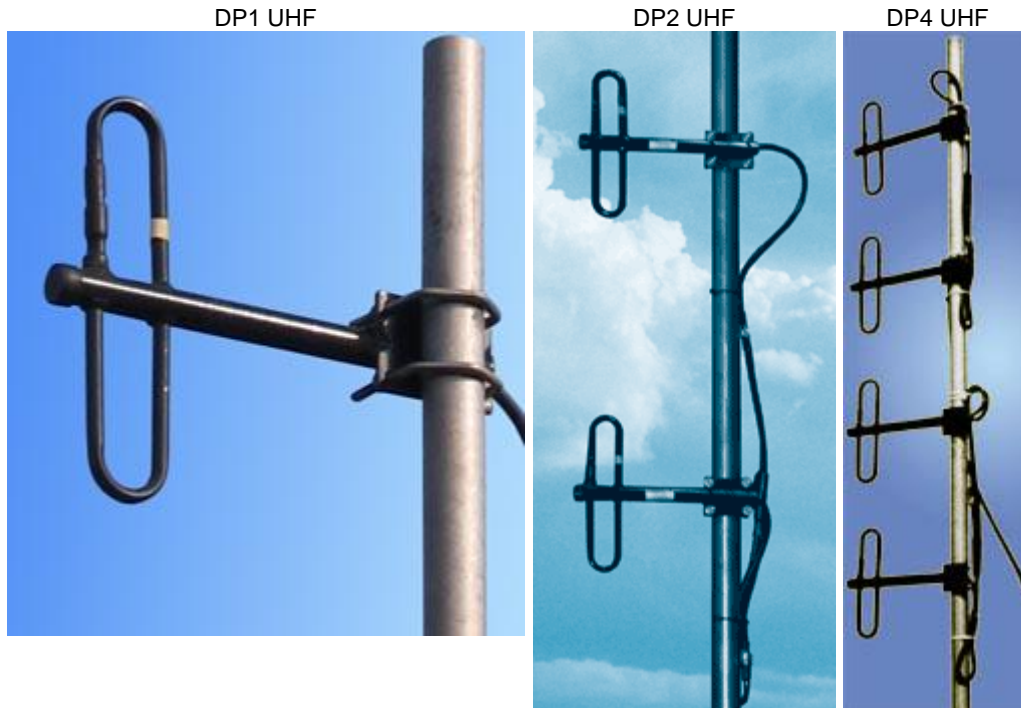
D1 UHF H-plane pattern, OFFSET (1/8λ)





400-490 MHz Dipole antennas DP1 UHF, DP2 UHF, DP4 UHF

107497, Moscow Chernicinsky pr-d 7/1
Tel.: (495) 775-43-19, 462-44-14
Tel./fax: 462-44-14
E-mail: radial@radial.ru
www.radial.ru



Electrical specifications

Model	DP1 UHF	DP2 UHF	DP4 UHF
Operating frequency band, MHz		400-490	
VSWR, not more than		1.5	
Gain OFFSET, dBi	5.15	8.15	11.15
Sector in vertical plane , -3dB	75°	37°	18°
Impedance, Ohm		50	
Max. power input, W	400	400	400

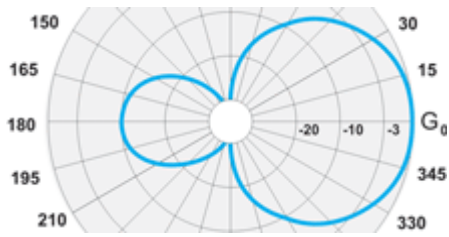
Mechanical specifications

Model	DP1 UHF	DP2 UHF	DP4 UHF
Weight, kg	0.6	1.5	3.25
Height/Length, M	0.28	0.8	1.7
Construction material		Aluminium alloy	
Mast diametr, mm		25-55	
Rated wind velocity, m/s		55	
Wind loading area, m ²	0.023	0.046	0.092
Load of side wind 45 m/s, H	26	52	104
Rated wind velocity with 0.5" icing, m/s		28	
Temperature range, °C		from -50 to +50	
Connector		N-female	

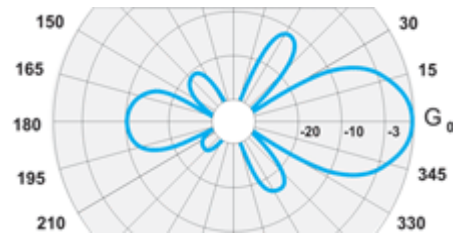
Antenna DP1 UHF represents all-welded nonseparable folded Pistolcors dipole. Antenna is designed exclusively for lateral mount on 25-55 mm diameter masts within $1/4 \lambda$ distance from mast. Antenna has reliable polymeric coating, which protects from hostile environment. Antenna is used for array antenna manufacturing.

DP2 and DP4 UHF antenna represents collinear dipole system, with antenna DP1 UHF as the main structural component. These panel type array antennas are designed for mounting on radiopaque wide section towers, like television towers or chimney-stalks, to form different (mainly circular) patterns. Shipped together with adders TK-52U and TK-54U.

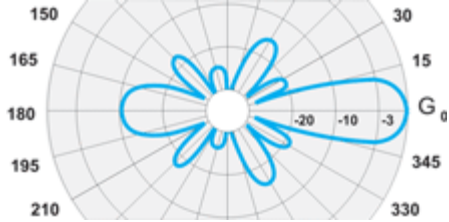
DP1 UHF E-plane pattern



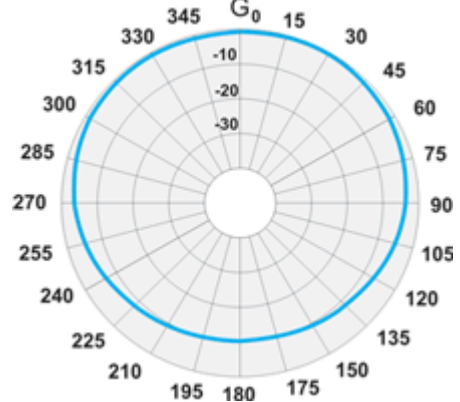
DP2 UHF E-plane pattern



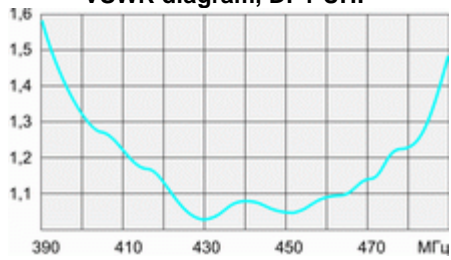
DP4 UHF E-plane pattern



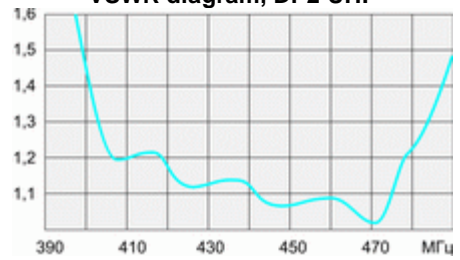
DP1 UHF H-plane pattern



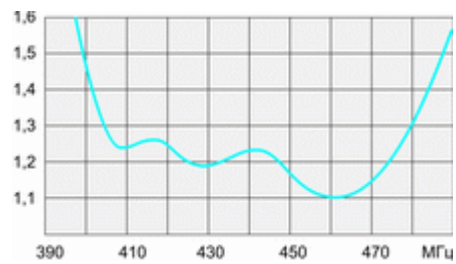
VSWR diagram, DP1 UHF



VSWR diagram, DP2 UHF



VSWR diagram, DP4 UHF





400-490 MHz Dipole antennas DM4 UHF(L), DM4 UHF(H)

107497, Moscow Chernicinsky pr-d 7/1
Tel.: (495) 775-43-19, 462-44-14
Tel./fax: 462-44-14
E-mail: radial@radial.ru
www.radial.ru



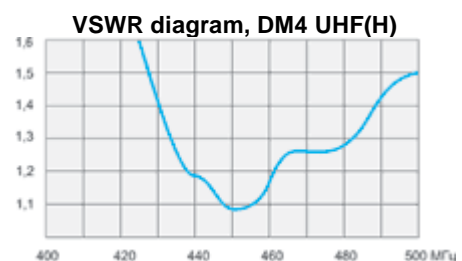
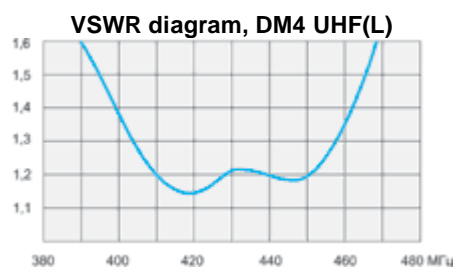
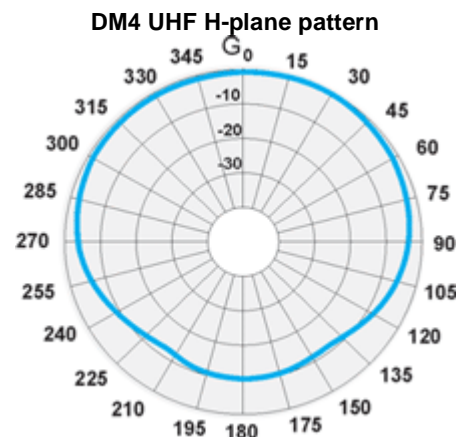
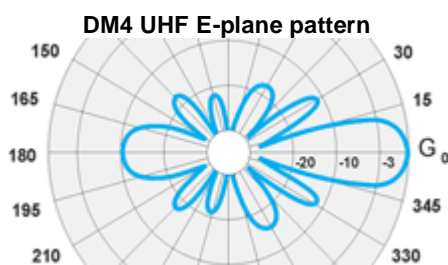
Electrical specifications

Model	DM4 UHF(L)	DM4 UHF(H)
Operating frequency band, MHz	400-460	440-490
VSWR, not more than		1.5
Gain OFFSET, dBi	11.15	11.15
Sector in vertical plane, °		18°
Impedance, Ohm		50
Max. power input, W		400

Mechanical specifications

Model	DM4 UHF(L)	DM4 UHF(H)
Weight, kg		6
Height, M		2.4
Construction material		Aluminium alloy
Mast diameter, mm		50-110
Rated wind velocity, m/s		55
Wind loading area, m ²		0.092
Load of side wind 45 m/s, H		104
Rated wind velocity with 0.5" icing, m/s		40
Temperature range, °C		from -50 to +60
Connector		N-female

In the conditions of increased demand for dipole four-element antennas DP4 UHF their modernization has been conducted with the aim to decrease the prime cost and to enhance the electrical reliability. As a result there were worked out the four-element all-welded antenna arrays - DM4-UHF(L) and DM4-UHF(H) which cover the range of 400-500 MHz. These antennas possess all the features of the panel antennas - high gain, broad operating bandwidth and elliptical shape of the radiation pattern. Nonseparable adder unit improves the reliability of antenna and facilitates its mounting. The construction of two such antennas placed on the opposite edges of the mast suggests the best solution at creating quasi-circular antenna system (the annular phased antenna array). A set of clamps CP-110 for mounting antenna to the mast is included into the antenna equipment and allows antenna's reliable fixing at the telecommunication towers





400-490 MHz Lokomotive antenna LA-UHF. Models LA-433, LA-446, LA- CDMA

107497, Moscow Chernicinsky pr-d 7/1
Tel.: (495) 775-43-19, 462-44-14
Tel./fax: 462-44-14
E-mail: radial@radial.ru
www.radial.ru



Electrical specifications

Model	LA-UHF	LA-433	LA-446	LA-CDMA
Operating frequency band, MHz	400-490	428-438	440-452	453-467
VSWR, not more than	1.5	1.5	1.5	1.5
Gain OFFSET, dBi	2.15	2.15	2.15	2.15
Sector in vertical plane, -3dB	65°	65°	65°	65°
Impedance, Ohm	50	50	50	50
Max. power input, W	300	300	300	300

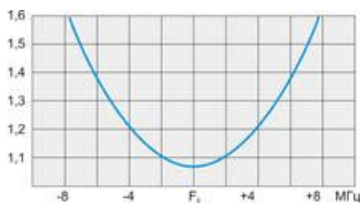
Mechanical specifications

Model	LA-UHF	LA-433	LA-446	LA-CDMA
Weight, kg			not more 1	
Height/Length, mm			80	
Construction material			Aluminium alloy	
Radome			ABS	
Standard mounting			horizontal metal plane	
Rated wind velocity, m/s			55	
Wind loading area, m ²			0,008	
Rated wind velocity with 0.5" icing, m/s			42	
Temperature range, °C			from -50 to +50	
Connector			N-female	

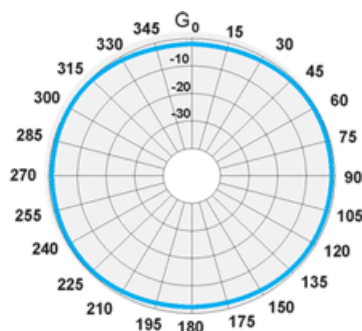
Locomotive antennas a new series of models "LA" are purposed to be exploited in the railroad communications systems within the range 405-470 MHz. The equipment of TETRA standard that works in this range as well as the data transfer system may include these mobile antennas.

The "LA" models have low-profile construction, their height does not exceed 80 mm and they are protected by a strong case made of ABS-plastic. This ensures the improved aerodynamic characteristics and additional electrical safety of this antenna. The construction is grounded by direct current.

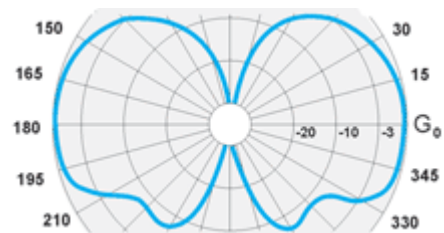
VSWR diagram, "LA" antennas



"LA" H-plane pattern



"LA" E-plane pattern





405-470 MHz Lokomotive antennas PA-420, PA-450

107497, Moscow Chernicinsky pr-d 7/1
Tel.: (495) 775-43-19, 462-44-14
Tel./fax: 462-44-14
E-mail: radial@radial.ru
www.radial.ru



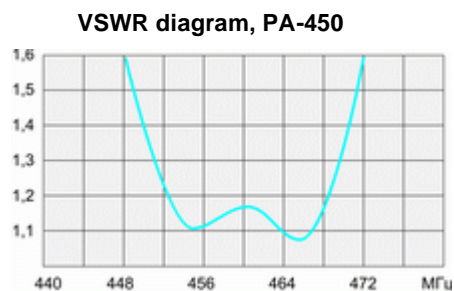
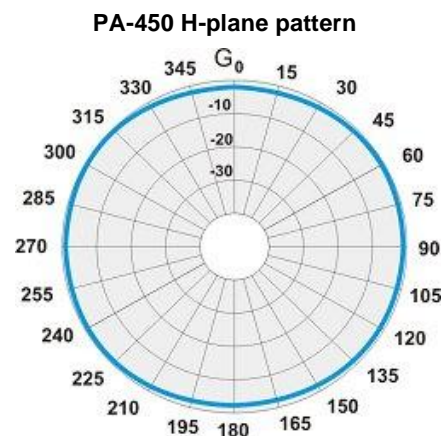
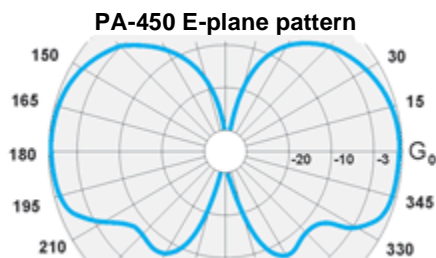
Electrical specifications

Model	PA-420	PA-450
Operating Frequency band, MHz	405-445	450-470
VSWR, not more than		1.5
Gain OFFSET, dBd		0
Sector in vertical plane, -3dB		65°
Impedance, Ohm		50
Max. Power input, W		300

Mechanical specifications

Model	PA-420	PA-450
Weight, kg		0.8
Height/Length, mm		190
Construction material		Aluminium alloy
Standard mounting		horizontal metal plane
Rated Wind Velocity, m/s		55
Wind Loading area, m ²		0.006
Rated Wind Velocity with 0.5" icing, m/s		42
Temperature Range, °C		from -50 to +50
Connector		N-female

Locomotive antennas PA-420, PA-450 and a new series of models "LA" are purposed to be exploited in the railroad communications systems within the range 405-470 MHz. The equipment of TETRA standard that works in this range as well as the data transfer system may include these mobile antennas. The models PA-420 and PA-450 are all-metal quarter-wave loop vibrators. Their construction provides the direct grounding and the electric shock protection. The "LA" models have low-profile construction, their height does not exceed 80 mm and they are protected by a strong case made of ABS-plastic. This ensures the improved aerodynamic characteristics and additional electrical safety of this antenna. The construction is grounded by direct current.





390-490 MHz Directional antennas Y4 UHF (L, H)

107497, Moscow Chernicinsky pr-d 7/1
Tel.: (495) 775-43-19, 462-44-14
Tel./fax: 462-44-14
E-mail: radial@radial.ru
www.radial.ru



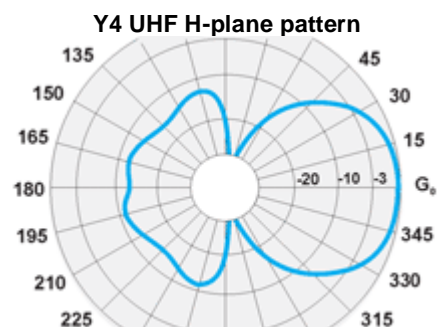
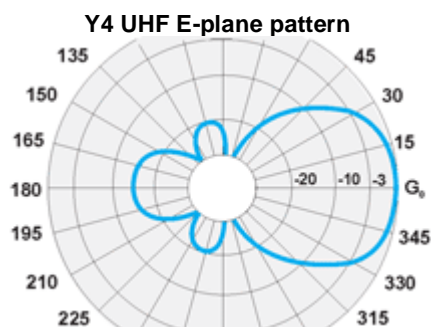
Electrical specifications

Model	Y4 UHF(L)	Y4 UHF(H)
Operating frequency band, MHz	390-440	430-490
VSWR, not more than		1.5
Gain, dBi		8.15
Sector , -3dB in vertical plane		63°
in horizontal plane		68°
Polarization		vertical
Impedance, Ohm		50
Max. power input, W		400

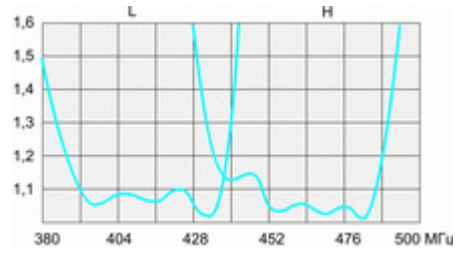
Mechanical specifications

Model	Y4 UHF(L)	Y4 UHF(H)
Weight, kg		1.45
Size, mm		840x350x120
Construction material		Aluminium alloy
Mast diametr, mm		25-55
Rated wind velocity, m/s		45
Wind loading area, m ²	0.05	0.04
Load of side wind 45 m/s, H	55	45
Rated wind velocity with 0.5" icing, m/s		28
Temperature range, °C		from -50 to +50
Connector		N-female

Antenna Y4 UHF was designed specifically to operate as a part of communication systems in regions with tough climatic conditions: at far North, mountainous regions, and maritime climatic zone. All-welded construction makes it invulnerable to icing and strong wind. Polymeric coating protects it from hostile environment. This antenna will be optimal for subscriber radio stations, operating with frequency separation 10-12 MHz, due to wide operating band. There are not so many antennas able to provide such bandwidth!



VSWR diagram, Y4 UHF(L, H)



2009



400-475 MHz Directional antennas Y6 UHF (L, H)

107497, Moscow Chernicinsky pr-d 7/1
Tel.: (495) 775-43-19, 462-44-14
Tel./fax: 462-44-14
E-mail: radial@radial.ru
www.radial.ru



Electrical specifications

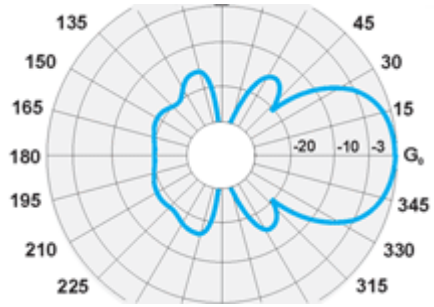
Model	Y6 UHF(L)	Y6 UHF(H)
Operating frequency band, MHz	400-445	435-475
VSWR, not more than		1.5
Gain, dBi		11.15
Sector, -3dB in vertical plane		53°
in horizontal plane		60°
Polarization		vertical
Impedance, Ohm		50
Max. power input, W		400

Mechanical specifications

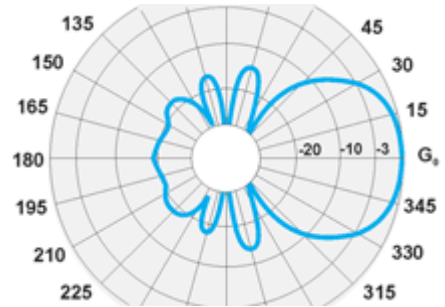
Model	Y6 UHF(L)	Y6 UHF(H)
Weight, kg		2.45
Size, mm		1100x350x120
Construction material		Aluminium alloy
Mast diameter, mm		38-65
Rated wind velocity, m/s		50
Wind loading area, m ²		0.04
Load of side wind 45 m/s, H		50
Rated wind velocity with 0.5" icing, m/s		28
Temperature range, °C		from -50 to +50
Connector		N-female

Antenna Y6 UHF was designed specifically to operate as a part of communication systems in regions with tough climatic conditions: at far North, mountainous regions, and maritime climatic zone. All-welded construction makes it invulnerable to icing and strong wind. Polymeric coating protects it from hostile environment. Antenna Y6 UHF is perfect solution for making links between paging or trunking communication base stations. Once antenna Y6 UHF is installed you can forget about it for a long time.

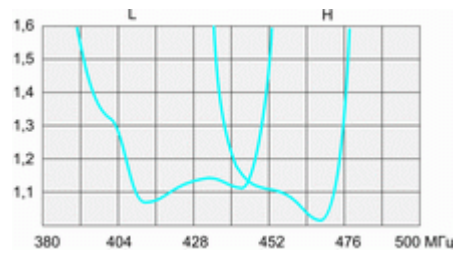
Y6 UHF E-plane pattern



Y6 UHF H-plane pattern



VSWR diagram, Y6 UHF(L, H)





395-470 MHz Directional antennas Y9 UHF (L, H)

107497, Moscow Chernicinsky pr-d 7/1
Tel.: (495) 775-43-19, 462-44-14
Tel./fax: 462-44-14
E-mail: radial@radial.ru
www.radial.ru



Electrical specifications

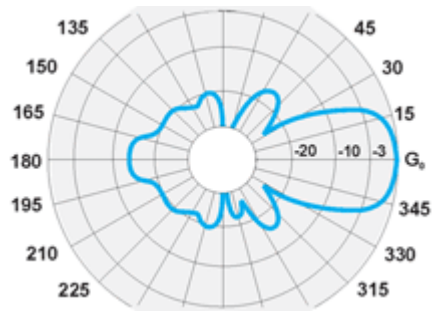
Model	Y9 UHF(L)	Y9 UHF(H)
Operating frequency band, MHz	395-430	435-470
VSWR, not more than		1.5
Gain, dBi		13.15
Sector, -3dB in vertical plane		36°
in horizontal plane		39°
Polarization		vertical
Impedance, Ohm		50
Max. power input, W		400

Mechanical specifications

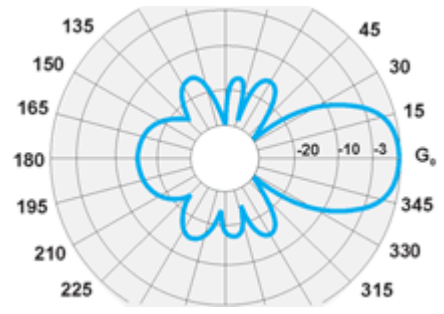
Model	Y9 UHF(L)	Y9 UHF(H)
Weight, kg		2.9
Size, mm		1800x360x120
Construction material		Aluminium alloy
Mast diameter, mm		38-65
Rated wind velocity, m/s		45
Wind loading area, m ²	0.08	0.07
Load of side wind 45 m/s, H	85	75
Rated wind velocity with 0.5" icing, m/s		28
Temperature range, °C		from -50 to +50
Connector		N-female

Antenna Y9 UHF is unique product, involving high requirements to gain along with wide band and mechanical strength. Such antenna will provide highest possible range out of field of view, operating at maximum allowable transmitter power output. Polymeric coating ensures protection from hostile environment and icing.

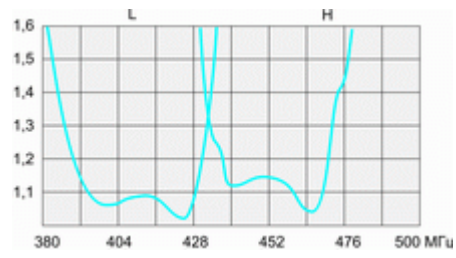
Y9 UHF E-plane pattern



Y9 UHF H-plane pattern



VSWR diagram, Y9 UHF(L, H)





453-467 MHz
Directional antenna Y5-CDMA
453-467 MHz,
Y5-433 426-440 MHz,
Y5-446 436-454 MHz

107497, Moscow Chernicinsky pr-d 7/1
 Tel.: (495) 775-43-19, 462-44-14
 Tel./fax: 462-44-14
 E-mail: radial@radial.ru
 www.radial.ru



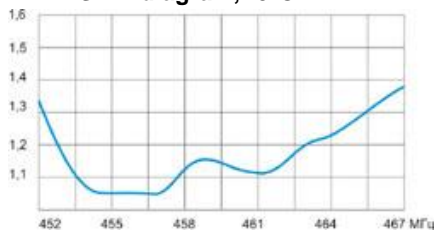
Electrical specifications

Model	Y5-CDMA	Y5-433	Y5-446
Operating frequency band, MHz	453-467	426-440	436-454
VSWR, not more than	1,5	1.5	1.5
Gain, dBi	8.15	8.15	8.15
Front-to-back ratio, dB	15	15	15
Sector , -3dB			
E-plane pattern	55°	55°	55°
H-plane	86°	86°	86°
Polarization	vertical	vertical	vertical
Impedance, Ohm	50	50	50
Max. power input, W	50	50	50

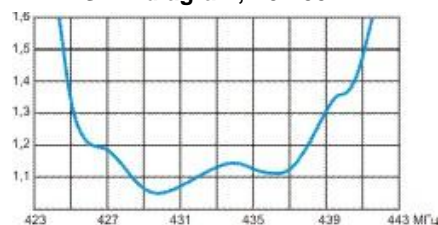
Mechanical specifications

Model	Y5-CDMA	Y5-433	Y5-446
Weight, kg		0.65	
Size, mm		640x330x20	
Construction material		Aluminium alloy	
Mast diametr, mm		25-55	
Rated wind velocity, m/s		45	
Load of side wind 45 m/s, H		10	
Rated wind velocity with 0.5" icing, m/s		28	
Temperature range, °C		from -50 to +50	
Connector		TNC-male	
		low loss cable 2.5 m	

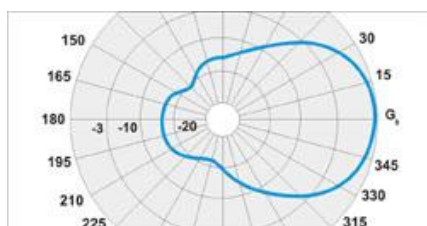
VSWR diagram, Y5-CDMA



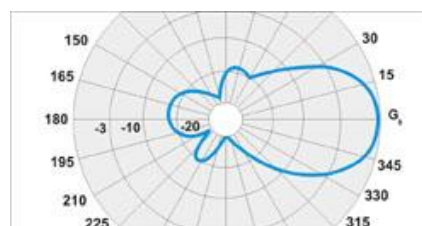
VSWR diagram, Y5-433



"Y5" antennas H-plane pattern



"Y5" antennas E-plane pattern





380-500 MHz Panel antennas RAO-2U-60, RAO-2U-120, RAO-3U-120, RAO-4U-120

107497, Moscow Chernicinsky pr-d 7/1
Tel.: (495) 775-43-19, 462-44-14
Tel./fax: 462-44-14
E-mail: radial@radial.ru
www.radial.ru



RAO-2U-120



RAO-4U-120

Electrical specifications

Model	RAO-2U-60	RAO-2U-120	RAO-3U-120	RAO-4U-120
Operating frequency band, MHz	RAO-2UL-60 380-440 RAO-2UH-60 435-500	400-470	400-470	400-470
VSWR, not more than			1.5	
Gain, dBi	10	8	10.5	11
Sector in vertical plane , -3dB, ± 1°		36°	22°	17°
Sector in horizontal plane , -3dB, ± 5°	60°	120°	120°	120°
Impedance, Ohm			50	
Max. power input, W	500	400	400	400
Lightning protection			all-metal structure	

Mechanical specifications

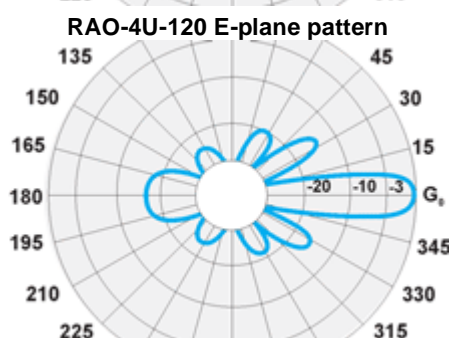
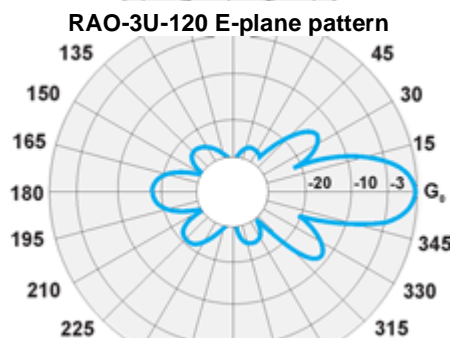
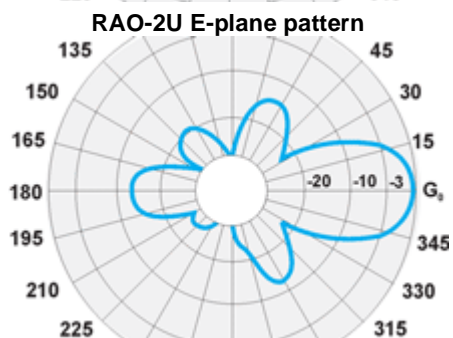
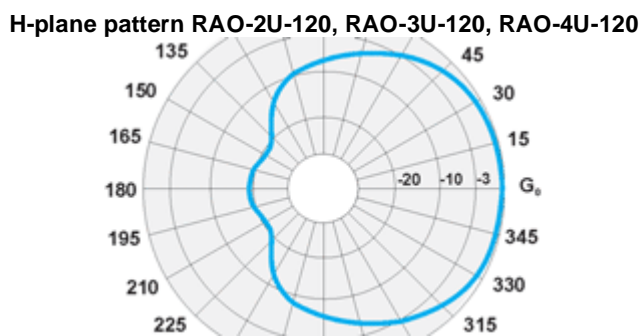
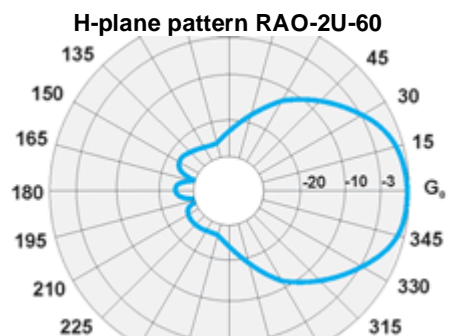
Model	RAO-2U-60	RAO-2U-120	RAO-3U-120	RAO-4U-120
Weight not more than , kg	9.5	7	11.7	15.6
Radiating unit construction material			aluminum	
Radome material			ABS	
Radome color			grey	
Standard mounting			to a 45-60 mm dia. tube	
Optional mounting			wall mount or frame side mount	
Rated wind velocity, m/s			40	

Wind loading area, m ²	0.8	0.46	0.64	0.84
Temperature range, °C			from -50 to +50	
Connector			7/16 DIN (N-female optional)	
Size, sm	80x113x26	41x113x26	41x155x26	41x205x26

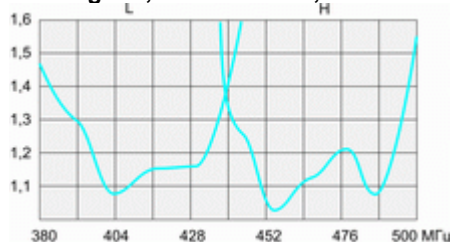
RAO 2U Series antennas are designed for using as transceiving antennas in trunking multichannel systems supporting Tetra and MPT1327 standards, as well as in NMT 450 and CDMA 450 cellular systems. The antennas can be used both as stand-alone sector antennas in telecommunication systems operating in cellular-segmented service zones and as the components of circular antenna arrays. The antennas of this type are of great demand due to enhanced gain factor.

The RAO 2U antenna represents a phased array comprising two broad passband components with parallel feeding. Specific form of the reflector element provides the necessary radiation sectors (60° and 120°).

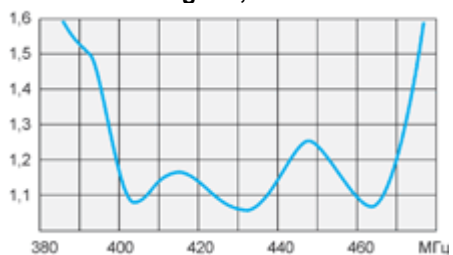
The panel antennas of this class favorably differ from the classical folded dipole antenna arrays in that they have guaranteed standard width of the directional diagram, enhanced backfire suppression, as well as high degree of rainfall protection due to high-quality fiberglass radiotransparent radome. Its special ABS coating provides reliable protection from solar ultraviolet radiation.



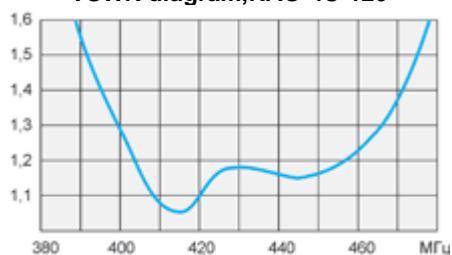
VSWR diagram, RAO-2UL-120, RAO-2UH-120



VSWR diagram, RAO-3U-120



VSWR diagram, RAO-4U-120

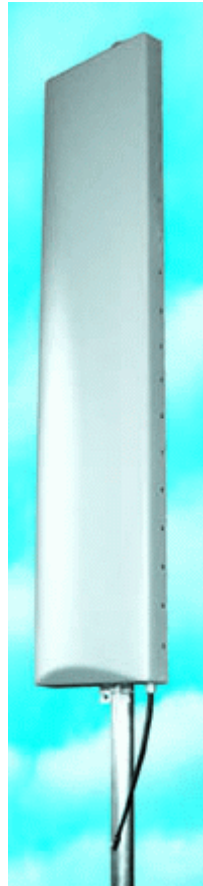




400-470 MHz Panel antennas RAV-2U-90, RAV-4U-90

107497, Moscow Chernicinsky pr-d 7/1
Tel.: (495) 775-43-19, 462-44-14
Tel./fax: 462-44-14
E-mail: radial@radial.ru
www.radial.ru

Antenna RAV-4UL-90



Antenna RAV-2UL-90



Electrical specifications

Model	RAV-2U-90	RAV-4U-90
Operating frequency band, MHz	RAV-2UL-90	RAV-4UL-90
		400-430
	RAV-2UH-90	RAV-4UH-90
		450-470
VSWR, not more than		1,5
Gain, dBi	8	11
Sector in vertical plane , -3dB, ± 1°	37°	18°
Sector in horizontal plane , -3dB, ± 5°		90°
Impedance, Ohm		50
Max. power input, W		400
Lightning protection		yes

Mechanical specifications

Model	RAV-2U-90	RAV-4U-90
Weight not more than , kg	9.5	20
Radiating unit construction material		aluminum
Radome material		ABS
Radome color		grey
Standard mounting		to 45-60 mm dia. tube
Optional mounting		wall mount or frame side mount
Rated wind velocity, m/s		40
Wind loading area, m ²	0.43	0.8
Temperature range, °C		from -50 to +50
Connector		7/16 DIN (N-female optional)

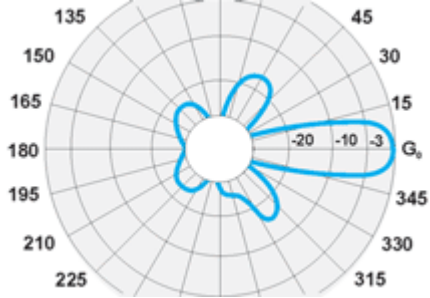
Size, mm

950x400x80

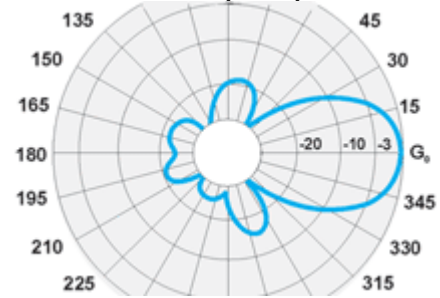
1900x400x80

Considered antenna provides guaranteed 90-degree half-power radiation sector and possesses high gain due to concentration of energy in horizontal and vertical plane. Patches, implemented in this array antenna, allowed us to create low-profile panel antenna with high gain factor, and forward/backward ratio. Antenna is protected by ABS radome with ultraviolet radiation resistant coating. Recommended for applications like Tetra and MPT1327 trunking systems, and IMT-2000 and NMT - 450 i cellular systems.

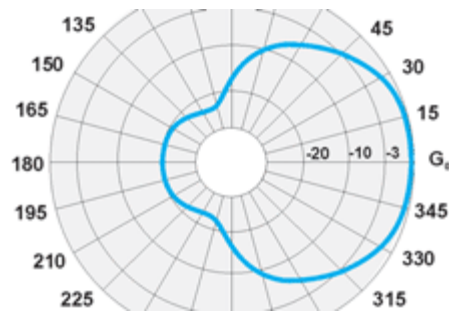
RAV-4U-90 E-plane pattern



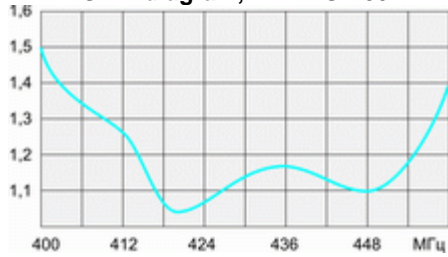
RAV-2U-90 E-plane pattern



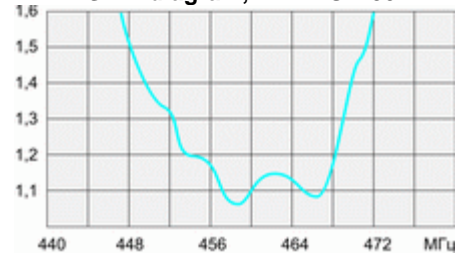
RAV-2(4)U-90 H-plane pattern



VSWR diagram, RAV-2UL-90



VSWR diagram, RAV-2UH-90





400-470 MHz Panel antennas RAX-2U-70, RAX-4U-70

107497, Moscow Chernicinsky pr-d 7/1
Tel.: (495) 775-43-19, 462-44-14
Tel./fax: 462-44-14
E-mail: radial@radial.ru
www.radial.ru

Electrical specifications

Model	RAX-2U-70	RAX-4U-70
Operating frequency band, MHz	RAX-2UL-70	RAX-4UL-70 400-430
	RAX-2UH-70	RAX-4UH-70 440-470
VSWR, not more than		1.5
Gain, dBi	9	12
Sector in vertical plane, -3dB, $\pm 1^\circ$	38°	18°
Sector in horizontal plane, -3dB, $\pm 5^\circ$		70°
Isolation	> 25 dB	> 25 dB
Impedance, Ohm		50
Max. power input, W		400
Lightning protection		yes

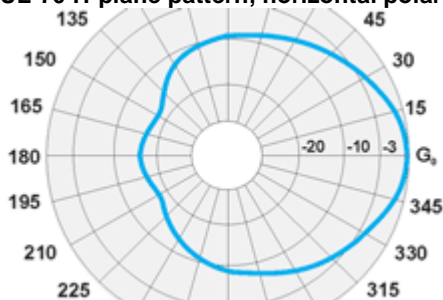


Mechanical specifications

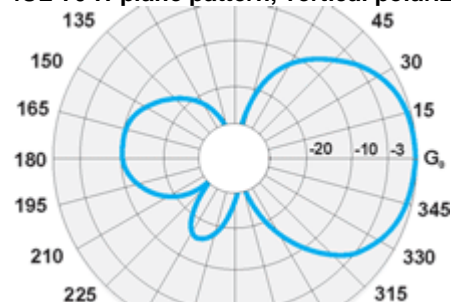
Model	RAX-2U-70	RAX-4U-70
Weight not more than, kg	9,5	20
Radiating unit construction material		aluminum
Radome material		ABS
Radome color		grey
Standard mounting		to a 45-60 mm dia. tube
Optional mounting		wall mount or frame side mount
Rated wind velocity, m/s		40
Wind loading area, m ²	0.43	0.8
Temperature range, °C		from -50 to +50
Connector		7/16 DIN (N-female optional)
Size, mm	950x400x80	1900x400x80

Modern standards for digital telecommunication require application of separated receiving, what results in switching two antennas or antenna arrays for receiving. For similar cause but in case of limited space for placement of antennas it is possible to use double-input panel antennas with cross polarization. We have developed effective low-profile patch panel antenna with tilted polarization of ± 45 degrees. Antenna is protected by ABS radome with resistant to ultraviolet radiation. Recommended for applications like Tetra trunking systems and IMT-2000 standard cellular systems.

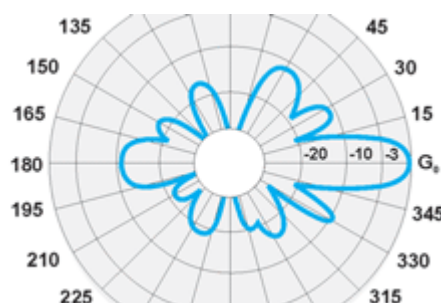
RAX-4UL-70 H-plane pattern, horizontal polarization

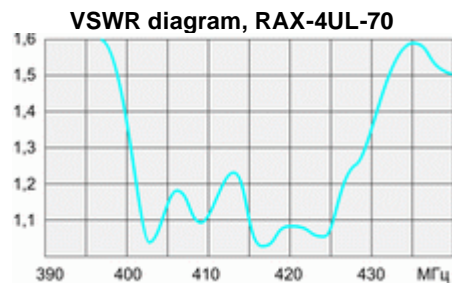
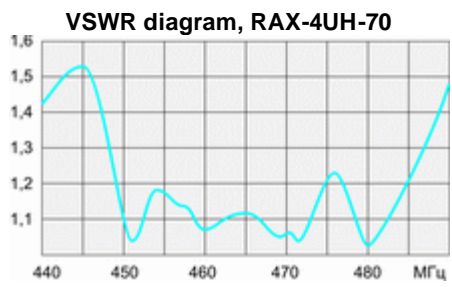


RAX-4UL-70 H-plane pattern, vertical polarization



RAX-4UL-70 E-plane pattern, vertical polarization







Subscriber's antenna SU-3T 380-400 MHz

107497, Moscow Chernicinsky pr-d 7/1
Tel.: (495) 775-43-19, 462-44-14
Tel./fax: 462-44-14
E-mail: radial@radial.ru
www.radial.ru



Electrical specifications

Model	SU-3T
Operating frequency band, MHz	380-400
VSWR, not more than	1.5
Gain, dBi	4
Sector in vertical plane, -3dB	180°
Sector in horizontal plane, -3dB	180°
Impedance, Ohm	50
Max. power input, W	200

Mechanical specifications

Model	SU-3T
Weight not more than, kg	1.15
Radiating unit construction material	brass
Radome material	PVC
Radome color	white
Standard mounting	on a wall
Optional mounting	on a mast
Temperature range, °C	from -50 to +50
Connector	N-female
Size, sm	350x210x65

